

SECTION 01002
SPECIAL CONDITIONS

1. COMMENCEMENT AND COMPLETION OF WORK:

The Contractor shall commence work under this contract within ten calendar days after notice to proceed and shall diligently prosecute said work so as to substantially complete the entire project within 120 consecutive calendar days and reach final completion within an additional 28 days for a total of 148 days at which time the project shall be placed within use.

2. SCOPE OF THE WORK:

The work to be done hereunder includes the furnishing of all necessary machinery, equipment, tools, labor and other construction means, and all materials and equipment required to perform all work as set forth and called for by the Plans and Specifications and including the placing of the entire project into satisfactory operation.

3. LOCATION:

The work under this Contract will be located in Bluffton, South Carolina as shown on the Plans.

4. EXTENSION OF TIME AND FAILURE TO COMPLETE ON TIME:

Any and all extensions of time shall be in accordance with the General Conditions, except as otherwise hereinafter provided.

Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in paragraph 1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$500 for each day that expires after the time specified in paragraph 1 for Substantial Completion until the Work is substantially complete.

5. SANITARY REGULATIONS:

The Contractor shall provide adequate sanitary conveniences for use of those employed on the work and their use shall be strictly enforced. Such conveniences shall be made available when the first employees arrive on the site and shall be removed after the departure of the last employees from the job. The facilities shall be maintained at such points and in such manner as approved, and the Owner/Engineer shall have the right to inspect such facilities to determine whether or not sanitary requirements have been complied with.

6. ENVIRONMENTAL IMPACT:

The Contractor shall conduct all his operations so as to minimize, to the greatest extent possible, adverse environmental impact.

a) Noise.

All equipment and machinery shall be provided with exhaust mufflers maintained in good working order so as to reduce operating noise to minimum levels. In addition, operation of equipment and machinery shall be limited to daylight hours, except with the permission of the Engineer, based on critical need for the operation.

b) Dust/Smoke.

All equipment movements shall be accompanied by a minimum of dust. Traveled surfaces and earthwork shall be maintained in a moist condition to avoid the generation of dust or the airborne movement of particulate matter under all prevailing atmospheric conditions.

Burning operations will not be allowed by the owner or appropriate regulatory agency.

c) Traffic.

Trucks carrying spoil, fill, concrete or other material shall be routed over roads which will result in the least effect on traffic and nuisance to the public. All material shall be loaded in a manner which will preclude the loss of any portion of the load in transit, including covering, if necessary.

d) Siltation.

All points of concentrated runoff from rainfall shall be visually monitored to determine that no eroded material from the construction site is leaving the Owner's property. Measures shall be taken to promptly eliminate such a deposition if occurring, including the installation of detention basins.

7. STORAGE OF MATERIALS:

The Contractor shall arrange his plant and store his materials as compactly as practicable at points convenient for the Contractor and which do not damage the work or interfere with public activities or with work of other contractors or with free access to all parts of the site and to utility installations. Materials shall be so stored as to facilitate inspection and to insure preservation of their quality and fitness for use. They shall be placed on wooden platforms or other clean surfaces and not on the ground and shall be placed under cover. The Contractor shall provide the storage facilities subject to approval by the Owner (Town of Bluffton).

8. CONSTRUCTION STAKING:

The Engineer will provide benchmarks and baselines for horizontal and vertical control at the site of the work.

From the baselines and benchmarks established by the Engineer, the Contractor shall complete the layout of the work and shall be responsible for all measurements that may be required for the execution of the work prescribed in the specifications or on the Contract Plans, subject to such modifications as maybe required to meet changed conditions or as a result of necessary modifications to the contract work. The Contractor shall exercise proper and reasonable care in verifying figures shown on the Drawings before laying out the Work and will be responsible for any error resulting from his failure to exercise such care.

The Contractor shall furnish, at his own expense, all such stakes, spikes, steel pins, templates, platforms, equipment, instruments, tools and material and all labor including instrument, rodmen, chainmen, etc., as may be required in laying out any part of the work from the baselines and benchmarks established by the Engineer.

It shall be the responsibility of the Contractor to maintain and preserve all stakes and other marks established by the Engineer until authorized to remove them, and if such marks are destroyed by the Contractor or through his negligence prior to their authorized removal, they may be replaced by the Engineer at his discretion, and the expense of replacement will be deducted from any amounts due or to become due the Contractor.

All survey data shall be recorded in accordance with standard and approved methods. All field notes, sketches, records and computations made by the Contractor in laying out the work shall be available at all times during the progress of the work for the ready examination by the Owner/Engineer or his duly authorized representative.

The Owner/Engineer may make original and final surveys and make computations to determine the quantities of work performed or finally in place, if required.

The Contractor shall make such surveys and computations as are necessary to determine the quantities of work performed or placed during each period for which a progress payment is to be made. All original field notes, computations and other records, or facsimile copies thereof, taken by the Contractor for the purpose of construction and for progress surveys, shall be furnished promptly to the representative of the Owner/Engineer for permanent records and for determining the proper amount of progress payments due to the Contractor. Unless waived in each specific case, quantity surveys made by the Contractor shall be made during the presence of a representative of the Engineer.

The Owner/Engineer may make checks as the work progresses to verify lines and grades established by the Contractor and to determine the conformance of the completed work as it progresses with the requirements of Contract Specifications and Plans. Such checking by the Owner/Engineer or his representative shall not relieve the Contractor of his responsibility to perform all work in accordance with the Contract Plans and Specifications and the lines and grades given therein. In the event that location marks as established by the Contractor are found to be inaccurate or inadequate, work shall be suspended until corrections have been made.

No separate payment will be made for the costs involved in the survey work, layout work or staking performed by the Contractor. All such costs will be considered as incidental to the Contract.

9. UTILITIES:

Utilities such as sewer, water, gas, phone, cable television, irrigation, and electric lines encountered in the work shall be protected from injury and maintained in service until moved or replaced as required under this Contract or by others as the case may be, or abandoned as may be necessary for the proper construction and use of the new work. The Contractor is responsible for all coordination with appropriate utility owners and replacement of any damaged utility at no additional cost to the Owner.

10. ADJUSTMENT OF DISCREPANCIES:

In all cases of discrepancies between the various dimensions and details shown on drawings, or between the drawings and these specifications, the more expensive construction shall be estimated before construction is started; the matter shall be submitted to the Owner/Engineer for clarification. Without such a decision, discrepancies shall be adjusted by the Contractor at his own risk and in settlement of any complications arising from such adjustment; the Contractor shall bear all of the extra expense involved.

11. TESTING:

All tests/inspections shall be the responsibility of the Contractor. Testing shall be conducted as required in the various sections of these specifications, in accordance with the following:

a) Mill Tests.

Mill tests, if any, shall be conducted and reports submitted as specified for such material. Mill or shop tests shall be accomplished by the manufacturer or supplier of the materials, and may be conducted by an independent testing laboratory. These tests shall be performed in accordance with the ASTM Standard, if specified, or with other applicable standards.

The cost of mill tests shall be included in the lump sum or unit price bid, and no additional payment will be made.

b) Laboratory Tests.

Laboratory tests shall be conducted and test reports submitted where this type of test is specified. All laboratory tests shall be made by an approved independent laboratory. These tests shall be performed in accordance with ASTM Standards, if specified or other applicable standards if no reference is included.

The Contractor shall arrange for all tests of preliminary samples of materials and mixtures, in order to determine suitability of source and for initial design mixes of concrete. The cost of these preliminary tests shall be included in the lump sum or unit price of the contract and no additional payment will be made.

Routine tests of materials incorporated into the project will be performed by an approved independent testing laboratory. Samples shall be provided by the Contractor. The Contractor will pay for all concrete cylinder tests and preliminary tests to determine initial design mixes.

Soils tests for classification, gradation, moisture content and density will be paid for by the Contractor and will be included in the price for the appropriate item in the Bid Proposal for the number of tests specified in the technical sections of this Specification.

c) Field Tests.

Field tests of mechanical and electrical equipment, piping systems, electrical systems, control systems, ventilation systems, heating systems, water mains, pressure mains, sewers, drains, and similar facilities shall be conducted where this type of test is specified.

Field tests include determination of performance, capacity, efficiency, function, tightness, leakage or other special requirements. These tests shall be performed in accordance with applicable standards and test codes.

Field tests shall be set up and accomplished by the Contractor who shall provide all tools, equipment, instruments, personnel and other facilities required for the satisfactory completion of each test.

The cost of field tests shall be included in the lump sum or unit price for the appropriate item in the Bid Schedule and no additional payment will be made for field testing.

d) Factory Tests.

Factory tests of mechanical and electrical equipment relative to performance, capacity, rating, efficiency, function or special requirements shall be conducted in the factory or shop for each item when this type of test is specified. These tests shall be performed in accordance with applicable standards and test codes.

Factory tests shall be set up and accomplished by the equipment manufacturer who shall provide all shop space, tools, equipment, instruments, personnel and other facilities required for the satisfactory completion of each test.

The cost of factory tests shall be included in the lump sum or unit price of the Contract and no additional payment will be made for factory testing.

12. REFERENCE STANDARDS:

Reference to the standards of any technical society, organization, or association, or to codes of local or state authorities, shall mean the latest standard, code, specification, or tentative

standard adopted and published at the date of taking bids, unless specifically stated otherwise. If specifications are included in these Bid Documents, it is the contractor's responsibility to ensure that the specifications are the latest release; if not, the latest release of said specifications shall be adhered to.

13. PROJECT MANAGEMENT:

The Contractor shall schedule and coordinate the work of the Contractor and all subcontractors and others involved to maintain the accepted progress schedule. His duties shall also include the planning of the work, the scheduling of ordering and delivery of materials, and checking and control of all work under this Contract. Construction schedules shall be submitted to the Engineer for review prior to the start of any work. Schedules shall be verified or updated at the owner's request on a monthly basis.

The Contractor shall be responsible for complete supervision and control of his subcontractors as though they were his own forces. Notice to the Contractor shall be considered notice to all affected subcontractors.

The Contractor shall appoint a qualified representative to act as the Project Coordinator, or Superintendent, who shall be responsible for coordinating all work and providing liaison with the Engineer and the Owner. The Project Coordinator or Superintendent shall, in addition, plan the work, schedule the ordering and delivery of materials, and check and control the various phases of the construction of all work under this Contract. The Project Coordinator or Superintendent shall, in all matters, represent the Contractor at the sites of the work in the absence of a Corporate Officer or Principal of the firm.

The Project Coordinator or Superintendent shall not be changed without Owner's approval unless the project Coordinator or Superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ.

14. SHOP/WORKING AND CONSTRUCTION DRAWING - SUBMITTALS:

The Contractor shall submit to the Owner/Engineer a complete schedule of data on materials and equipment to be incorporated in the work. Submittals shall be supported by descriptive material, such as catalogs, cuts, diagrams, performance curves and charts published by the manufacturer, to show conformance to specification and drawings requirements; model numbers alone shall not be acceptable.

Each individual submittal item for materials and equipment shall be marked to show Specification Section and paragraph number which pertains to the item.

The purpose of shop drawing submittals is to demonstrate to the Engineer that the Contractor understands the design concept. The Engineer's review of such drawings, schedules, or cuts shall not relieve the Contractor from responsibility for deviation from drawings or Specifications unless he has, in writing, called the Engineer's attention to such deviation at the

time of submission, and has received from the Engineer, in writing, permission for such deviations.

Shop drawings shall be stamped by the Engineer with the following classifications:

- 1) No Exceptions Taken.
No corrections, no marks. Contractor shall submit copies for distribution.
- 2) Make Corrections Noted.
A few minor corrections. Items may be ordered as marked up without further resubmission. Submit corrected copies for distribution.
- 3) Amend and Resubmit.
Minor corrections. Item may be ordered at the Contractor's option. Contractor shall resubmit drawings with corrections noted.
- 4) Rejected-Resubmit.
Major corrections or not in accordance with the Contract Documents. No items shall be ordered. Contractor shall correct and resubmit drawings.

Corrections to shop drawings shall not relieve the Contractor from the obligation to complete the project within the time allowed by the Contract Documents.

The Contractor shall submit shop or working drawings of concrete reinforcement, structural details, piping layout, wiring, materials fabricated especially for this project, materials for which drawings are specifically requested, and equipment. The Contractor shall also submit structural shop drawing, computations and construction procedures for jacking pits, sheeted trenches and cofferdams to be used in construction.

Such drawings shall show the principal dimensions, the weight, structural and operating features, space required clearances, etc., depending on the subjects of the drawing. When it is customary so to do, or when the dimensions are of particular importance, the drawings shall be certified by the manufacturer as correct for this project.

No material shall be purchased or fabricated for equipment or other features until the Engineer has reviewed the shop or working drawings. All materials and work involved in the construction shall then be represented by said drawings. No work shall be done upon the foundations or any other part of a structure of which the design or construction is dependent upon the design of equipment or other features for which review is required until such review has been completed.

Six (6) copies (unless otherwise specified) of all shop or working drawings shall be submitted to the Engineer through the Contractor. Only drawings which have been checked and corrected by the material fabricator shall be submitted. The Contractor shall be responsible for the prompt submission of all shop or working drawings so that there shall be no delay to the work due to the absence of such drawings. Additional prints or drawings shall be furnished as required.

The review of shop and working drawings, etc., will be general and shall not relieve the Contractor from the responsibility for details of design, dimensions, etc., necessary for proper fitting and construction of the work required by the contract.

The Contractor shall furnish prints of all construction drawings in duplicate to the Engineer, who will retain one, set and return the other, having marked thereon such changes as he may suggest. Examination, suggestions and review by the Engineer of drawings or other data submitted to him pursuant to the provisions of this paragraph shall relate only to the apparent fitness of the items thus explained as an aid in producing the general result which is the purposed of the contract. The Engineer's examination, suggestions and review will not be directed, and shall not be understood to relate to the strength, adequacy or sufficiency of such things, which are and will remain solely the responsibility of the Contractor. At the completion of all construction and subsequent modifications, the Contractor shall prepare and deliver to the Engineer six copies of all previously submitted preliminary and shop drawings, each modified to include all subsequent additions and revisions that were made during construction. These said six copies will be identified as AS-BUILT SHOP DRAWINGS.

The Contractor shall furnish the Engineer, during the progress of the work, as many prints of all construction drawings as may be required for construction purposes.

The Contractor shall not order any material until the submitted detail drawings have been reviewed. If the Contractor departs from this procedure for his own convenience, such departure shall be at his own risk and expense, if any. The Contractor shall also give the Engineer notice, stating the quantity of material ordered and the location of the mill and shop where the material will be rolled and fabricated.

15. DIVISION OF WORK:

Division of work as made by the Contract Plans and Specifications is for the purpose of specifying all work which is required. There is no attempt to make complete classification according to trade or any agreements which may exist between Contractors or groups of Contractors and trade union. Such division and classification of the work shall be the Contractor's responsibility.

16. RESTORATION:

The Contractor shall conduct his operations so that restoration of roadways, driveways, curb and gutter, ditches and easements progresses along with the work. If the Owner/Engineer determines that inadequate progress is being made with the restoration, he may shut down the Contractor's operation until the restoration is caught up with the work. No open trenches will be left over night. All trenches will be backfilled before the end of the days operation.

Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed to those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing. Care shall be taken to correctly sever all roots necessary to complete work and consultation with the Town arborist shall be required before any impacts to vegetation is commenced. The Town of Bluffton Tree Ordinance shall be followed at all times.

17. EXISTING UTILITIES:

All known utility facilities are shown schematically on the plans and are not necessarily accurate in location as to plan or elevation. Utilities such as service lines or unknown facilities not shown on the plans will not relieve the Contractor of his responsibility under this requirement except as noted below. "Existing Utility Facilities" means any utility that exists on the project in its original, relocated or newly installed position.

The Contractor shall contact all owners of utilities including, but not limited to, gas companies, electric companies, telephone companies, cable television companies and governmental units prior to starting any excavation on the project and shall request that they locate and mark their respective facilities.

Location and marking of all utilities in accordance with all state and local laws shall be performed.

18. MAINTENANCE DURING CONSTRUCTION:

The Contractor shall maintain the work from the beginning of construction operations until final acceptance of the project. This maintenance shall constitute continuous and effective work prosecuted day by day with adequate equipment and forces to the end that the site and structures thereon are kept in satisfactory condition at all times, including satisfactory signing or marking as appropriate and control of traffic where required by use of traffic control devices as required by the State in which this project is located.

Upon completion of the work, the Contractor shall remove all construction signs and barriers before final acceptance of the Project.

While undergoing improvements, the roads shall be kept open to all traffic by the Contractor. The Contractor shall keep the portion of the Project being used by public traffic, whether it be

through or local traffic, in such condition that traffic will be adequately accommodated. The Contractor shall bear all cost of signs and markings as required and other maintenance work during construction and before the Project is accepted and of constructing and maintaining such approaches, crossings, intersections, and other features as may be necessary without direct compensation.

19. FAILURE TO MAINTAIN ROADWAYS AND STRUCTURES:

If, at any time, the Contractor fails to properly maintain roadways and structures, and the Owner/Engineer observes such activity, the Owner/Engineer will immediately notify the Contractor of such non-compliance. If the Contractor fails to remedy the unsatisfactory maintenance within 24 hours after receipt of such notice, the Owner/Engineer may immediately arrange for maintenance of the work, and the entire cost of this maintenance will be deducted from monies due or to become due the Contractor under the Contract. As an alternative to the Owner's/Engineer's maintaining the work, all the items and quantities of work done, but not properly maintained, may be deducted from the current progress estimate, even if such items have been paid for in a previous estimate.

20. FLAGGING TRAFFIC:

Competent, courteous, and neat flagmen shall be provided and available at all times when required. A sufficient number of flagmen shall be provided to stop traffic, advise the public of delays occasioned, and keep traffic in their respective lanes along the project. The Contractor shall conform to all guidelines set forth by the current SCDOT, Manual on Uniform Traffic Control Devices, and traffic control plan provided by the Contractor and approved by the Owner.

21. BARRICADES, DANGER, WARNING & DETOUR SIGNS:

The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs and other traffic control devices, and shall take all necessary precautions for the protection of the work and safety of the public. Highways and streets closed to traffic shall be protected by effective barricades, and obstructions shall be lighted during hours of darkness. Suitable warning signs shall be provided to properly control and direct traffic.

The Contractor shall furnish, install, and maintain all necessary barricades, warning signs, and other protective devices in accordance with the State requirements in which the project is located. Temporary signs may be reused, provided they are in good condition and legible. All protective devices shall be kept in a good, legible condition while in use.

As soon as construction advances to the extent that temporary barricades, and signs are no longer needed to inform the traveling public, such signs shall be promptly removed.

The cost of furnishing, erecting, maintaining, and removing protective devices will not be paid for as a separate Bid Item. Where the Contractor is required to perform any of these functions, the cost thereof shall be included in the overall Bid submitted. Ownership of the

temporary warning devices shall remain with the Contractor provided the devices are removed promptly after completion of the work as specified above. If such warning devices are left in place for more than 30 days after the specified time for removal, the Owner shall have the right to remove such devices and to claim possession thereof.

Reflectorization for Construction Signing shall conform to the requirements of the State Department of Transportation Standard Specifications.

22. HIGH VOLTAGE ACT:

The Contractor acknowledges the requirement of the High Voltage Power Line Safety Act of the General Assembly of South Carolina by execution of this Contract.

23. REFERENCED SPECIFICATIONS:

Reference to the Department of Transportation Standard Specifications is to current South Carolina Department of Transportation Standard Specifications.

24. DRAWINGS:

The work shall conform to the following drawings, all of which form a part of these specifications and are available in the office of Hussey, Gay, Bell & DeYoung, Inc., Consulting Engineers:

<u>SHEET NO.</u>	<u>TITLE</u>	<u>DATE (Latest Revision)</u>
1	Cover Sheet, Vicinity Map and Schedule of Drawings	July 2014
2	Construction Notes, and Legend	July 2014
3	Project Map	July 2014
4-6	Erosion and Sediment Control Plan	July 2014
7-9	Sanitary Sewer and Water Distribution Plan	July 2014
12-14	Construction Details	July 2014

25. PERMITS:

DHEC Stormwater Pollution Prevention Plan approval is not required, but local, state, and federal rules and regulations for erosion and sediment control as well as stormwater discharge rules and regulations shall be adhered to. The BJWSA (DHEC) permit (if applicable) to construct for the project which is hereby incorporated into this contract, unless otherwise specified herein. The contractor shall comply with all terms, conditions and requirements of the permits.

26. RECORD DATA:

Complete "record data" information shall be submitted by the Contractor to the Engineer along with the final pay request or sooner. "Record data" information shall include elevations of tops and inverts of all sanitary sewer structures and length, material and size of all pipes, location (and state plane coordinates) of all structures, fittings, valves, hydrants and service laterals. "Record data" shall include a two point frame of reference for all water valves and bends as well as all water and sewer service laterals. Final payment shall not be approved

prior to the Engineer receiving the required "record data" information from the Contractor. "Record data" information shall meet the requirements of all applicable authorities.

27. INSURANCE:

Add the following new paragraph to the General Conditions immediately after paragraph 5.04B:

A. The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Worker's Compensation, and related coverage under paragraphs 5.04.A.1 and A.2 of the General Conditions.

a.	State:	Statutory
b.	Applicable Federal (e.g., Longshoreman's):	Statutory
c.	Employer's Liability	Statutory

2. Contractor's General Liability under paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverage and eliminate the exclusion with respect to property under the care, custody and control of the Contractor:

a.	General Aggregate	\$1,000,000
b.	Products - Completed Operations Aggregate	\$1,000,000
c.	Personal and Advertising Injury	\$1,000,000
d.	Each Occurrence (Bodily Injury and Property Damage)	\$1,000,000
e.	Property Damage liability insurance will provide Explosion, Collapse, and Underground Coverage where applicable.	\$1,000,000
f.	Excess or Umbrella Liability	
1)	General Aggregate	\$2,000,000
2)	Each Occurrence	\$2,000,000

3. Automobile Liability under paragraph 5.04A.6 of the General Conditions:

a.	Bodily Injury	
	Each person	\$1,000,000
	Each accident	\$1,000,000
b.	Property Damage: Each Accident	\$1,000,000
c.	Combined Single Limit of	\$1,000,000

4. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

a.	Bodily Injury	
	Each Accident	\$1,000,000
	Annual Aggregate	\$1,000,000
7b.	Property Damage:	
	Each Accident	Included above
	Annual Aggregate	Included above

28. INSTRUCTIONS FOR MINIMIZING TREE DAMAGE DURING CONSTRUCTION AND PLANTING OF NEW TREES:

The contractor shall adhere to all requirements mentioned herein as well as to the Town of Bluffton Unified Development Ordinance (incorporated by reference herein, www.townofbluffton.sc.gov/Documents/article5designstandards.pdf). If there is any conflict between this section and the Unified Development Ordinance, Article 5 of the Unified Development Ordinance shall govern.

- A. When installing any utility line, irrigation line, etc. an air spade or boring must be used within the drip-line of any tree over 6 inches DBH, to avoid cutting roots.
- B. Where pervious paving is to be placed under the drip-line of any tree over 6 inches DBH, the soil shall be compacted to a percentage acceptable for pedestrian traffic only. *No roots over 2 inch caliper shall be cut to install paving.* Sub-base layer for pervious paving shall be placed around preserved tree roots.
- C. Where the cutting of tree roots less than 2 inch caliper cannot be avoided, the roots shall be cut flush by hand with a sharp blade or saw and immediately covered with a layer of moist soil or moist material such as burlap.
- D. Grading machinery shall not be used within the drip-line of any tree over 6 inches DBH. If at all possible, grading within the drip-line shall be completed with hand tools only. No heavy equipment shall be used, parked or stored within the dripline of any tree unless absolutely necessary.
- E. Where there is a slope easement that will affect any tree on private or public property, a permanent tree well shall be constructed to avoid placing any fill within the drip-line of any tree. No fill shall be stored within the dripline of any tree.
- F. Trees to be planted shall not be planted so that the top of root-ball (root flare) is below top of surrounding grade nor planted more than 2 inches above grade.

- G. No mulch shall be placed within 6 inches of trunk of a newly planted tree and mulch shall not be over three (3) inches deep.
- H. Trees planted within sidewalk must have root barriers placed around them to deter future sidewalk damage. Trees outside sidewalk must have root barriers placed at the edge of sidewalk to deter future sidewalk damage. Where pervious paving is to be used, steel paving edging, with spikes for support, can be used to support paving as well as act as a root barrier. This steel edging must be placed so that it does not sever the roots of existing trees.
- I. All containers, burlap, twine, straps, etc. shall be removed from root ball of trees at the immediate time and at the exact location where trees are to be planted. Tree roots of trees to be planted shall not be uncovered until at the time of planting and shall not be moved from one location to another with roots exposed.
- J. Planting holes shall be dug to a size roughly three (3) times the size of the root ball. Dig no deeper or slightly less deep than the height of the root ball. Do not cultivate the bottom of the hole, as it may cause settling of the root ball and the tree will be planted too deep. Use soil removed from hole to fill in around root ball. Tamp soil lightly, but do not compact soil. Newly planted trees shall be watered immediately after planting.
- K. All trees / landscaping planted on site must meet or exceed the American Standard for Nursery Stock (ANSI Z60.1) standards. All trees / landscaping planted on site must also meet the requirements of the Bluffton DSO Section 4.14 and Section 14.15.
- L. Erosion control that must be placed within the dripline or within 1.0 feet per inch of tree DBH, must be placed on natural grade. Erosion control cannot be trenched through the roots of existing trees. Erosion control shall be placed to prevent fill material from covering the roots of trees on site to the most extent possible. Any fill entering within the erosion control near a tree shall be immediately removed with hand tools only and that fill placed outside the dripline of the tree.

29. FRESHWATER WETLANDS:

Freshwater wetlands are evident near the project site, and a Preliminary Jurisdictional Determination letter has been obtained indicating the extents of same. No work shall occur in any federally defined freshwater wetland by the selected contractor or any sub-contractor. To ensure the preservation of any federally defined freshwater wetlands, the contractor shall clearly stake/flag/demarcate any wetlands that are shown on the Plan.

SECTION 01150
MEASUREMENT AND PAYMENT

A. SCOPE:

Under this heading shall be included the methods of measurement and payment for items of work under this Contract.

B. ESTIMATED QUANTITIES:

All estimated quantities for unit price items, stipulated in the Bid Proposal, or other Contract Documents, are approximate and are to be used as a basis for estimating the probable cost of the work and for comparing the bids submitted for the Project. The actual amounts of work done and materials furnished under price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and material furnished. The Contractor agrees to make no claim for damages, anticipated profits or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts included in the Bid Proposal. The Contractor will not be paid for any work which exceeds quantity set forth in the Bid Schedule without a change order issued before the work is performed unless specifically ordered in writing by the Owner/Engineer. The Contractor will provide assistance to the Engineer to check quantities and elevations when so requested.

LUMP SUM AND UNIT PRICE QUANTITIES:

All quantities are for unit price or lump sum items stipulated in the Bid Proposal. The Contractor, having read and understood the Bidding Documents and examined the Project sites and adjoining areas, and being familiar with the obstacles and conditions that will affect proposed work, hereby offers and agrees to furnish all labor, products, and services needed to provide work in accordance with the Bidding Documents and will provide a properly itemized listing for each bid item, supported by sufficiently substantially data, to permit evaluation of partial pay requests.

C. GENERAL

1. SITE CLEARING AND GRUBBING:

Areas to be cleared are within the limits of clearing as shown on the Plans. Payment is for furnishing all labor, material and equipment to complete the clearing and grubbing, including the removal of all residue from the site.

2. GRADING AND PROJECT MISCELLANEOUS:

Grading shall include all project excavation, compaction, proof rolling, and finish grading, on and off site borrow and earth fill to meet finish grades, NPDES sampling and monitoring, all removals not specifically listed in the Bid Schedule, project staking, bonds and insurance, and

all miscellaneous items not included elsewhere in this Bid Schedule to complete this project in accordance with the Contract Plans and Specifications. Payment shall be lump sum to cover all labor, materials and equipment to perform the work. Contractor will perform his own construction staking from baseline staking provided by the Owner.

- 3-4. REMOVE AND REPLACE ASPHALT PAVING SECTION (ROADS AND WALKS):
Measurement for the removal and replacement of asphalt shall be on the basis specified in the Bid Proposal and shall be done before and after the asphalt is removed to the extents approved by the Town. Payment is for providing all labor, materials, and equipment necessary to remove existing asphalt paving (mill if required) and GAB and disposing of material properly off site. The removed asphalt paving shall be replaced with the respective asphalt paving section (as depicted in the detail). Payment shall be on the basis specified in the Bid Proposal and shall cover furnishing, spreading, shaping and rolling of asphalt and furnishing, placing, mixing, compacting, and shaping the graded aggregate base (or flowable fill), as well as milling existing asphalt if required at the respective unit price in the bid proposal. Any compacting of subgrade required for the installation of the asphalt paving section shall be completed at the expense of the contractor.
5. REMOVE AND REPLACE CONCRETE PAVING SECTION:
Measurement for the removal and replacement of concrete shall be on the basis specified in the Bid Proposal and shall be done before and after the concrete is removed to the extents approved by the Town. Payment is for providing all labor, materials, and equipment necessary to remove existing concrete paving and disposing of material properly off site. The removed concrete paving shall be replaced with concrete paving section (as depicted in the detail). Payment shall be on the basis specified in the Bid Proposal and shall cover furnishing, placing, forming, shaping and finishing of concrete at the unit price in the bid proposal. Any compacting of subgrade required for the installation of the concrete paving section shall be completed at the expense of the contractor.
6. SILT FENCE AND TREE PROTECTION:
Measurement for these items shall be on the basis of linear feet in place. Payment is for all labor, material and equipment necessary to meet the requirements, including maintenance and removal, and shall be at the respective unit prices in the Bid Schedule.
7. HAY BALES, Cd1-Hb:
Measurement for this item shall be on the basis of completed units in place. Under this item the Contractor shall furnish all labor, material, and equipment to install and maintain hay bales at the locations shown on the Drawings and/or as directed by the Engineer. Payment for hay bales will be at the unit contract price in the Bid Proposal including removal at project acceptance.

8. GRASSING:

Measurement of grassing shall be on the basis of the number of square yards furnished and installed where shown on the plans and/or as directed by the Engineer. Payment for furnishing and installing the grassing shall be at the unit price in the Bid Proposal and will include furnishing and applying mulch, fertilizer and onsite or offsite topsoil as needed, and maintenance until a satisfactory stand of grass is achieved.

D. SANITARY SEWER SYSTEM

1 &3. 4 INCH AND 6 INCH LATERALS (DIRECT BURY):

Measurement of laterals will be on the basis of the number of linear feet of pipe in place measured along centerline. Payment for furnishing and installing the pipe shall be on the basis of the unit price in the Bid Proposal and shall cover all work required for excavation and backfilling to properly install the pipe, including plug, fittings, location marker, and tracing wire.

2&4. 6 INCH LATERALS (HORIZONTAL DIRECTIONAL DRILL):

Measurement of laterals will be on the basis of the number of linear feet of pipe in place measured along centerline. Payment for furnishing and installing the pipe shall be on the basis of the unit price in the Bid Proposal and shall cover all work and equipment required for excavation, backfilling, and drilling to properly install the pipe, including drilling fluid, plug, location marker, and tracing wire.

5-6. WYES:

Payment for furnishing and installing wyes will be on the basis of the unit price in the Bid Proposal and shall include all labor, material and equipment required for installation.

7. SEWER CLEANOUT:

Payment for furnishing and installing cleanouts will be on the basis of the unit price in the Bid Proposal and shall include all labor, material and equipment required for installation.

8-12. SEWER PIPE:

Measurement of pipe will be on the basis of the number of linear feet of pipe of each size and material in place measured along center line of pipe from center of manhole to center of manhole or stub end. Depth for payment will be determined from finished grade. Payment for furnishing and installing the pipe shall be on the basis of the unit price in the Bid Proposal and shall cover all work required for excavation, bedding, backfilling and testing to properly install the pipe, including tracing wire, marking tape and testing.

13. JACK AND BORE 16" STEEL CASING WITH 8" DIP CARRIER PIPE:

Measurement of 8" PVC sewer in steel casing will be for the number of feet of 8" carrier pipe and 16" steel casing installed as shown on the Plans. Payment shall be for boring and jacking

the casing and shall cover furnishing of all material, equipment and labor necessary to perform the work, including carrier pipe, casing spacers, and end seals. Carrier pipe will be PVC pipe paid under this item.

14. INSERT PVC SEWER MAIN IN CASING

Measurement of the sewer main will be on the basis of centerline length inserted in casing. Payment will be on the basis of the unit contract price in the Bid Proposal and will include all costs for the work, including furnishing and installing the carrier pipe, joints, fittings, spacers and testing.

15-20. STANDARD MANHOLES:

Payment for furnishing and installing manholes will be based on the unit price in the Bid Proposal and shall cover all labor, materials and equipment required for excavation, installation and backfilling for the manhole, including formed invert, steps and castings.

21. RECEIVING MANHOLE WITH OUTSIDE DROPS AND HDPE LINING

Measurement for this item will be on the basis of the completed job in place. Payment for furnishing and installing the manhole will be on the basis of the Lump Sum price for this item in the Bid Proposal and shall include all work for excavation, dewatering, concrete bottoms, frames and lids, steps, pipe connections, protective HDPE liner, backfill to grade, and manhole appurtenances.

22. CORE DRILL EXISTING MANHOLE:

Payment for connecting a new pipe to an existing manhole shall be at the unit price in the Bid Proposal and shall include all labor, materials and equipment necessary to core drill the existing manhole and make the new watertight connection.

E. WATER DISTRIBUTION SYSTEM

1, 3&4. 1 INCH, 4 INCH ,AND 6 INCH LATERALS (DIRECT BURY):

Measurement of laterals will be on the basis of the number of linear feet of pipe in place measured along centerline. Payment for furnishing and installing the pipe shall be on the basis of the unit price in the Bid Proposal and shall cover all work required for excavation and backfilling to properly install the pipe, including plug, fittings, location marker, and tracing wire.

2. 1 INCH LATERALS (HORIZONTAL DIRECTIONAL DRILL):

Measurement of laterals will be on the basis of the number of linear feet of pipe in place

measured along centerline. Payment for furnishing and installing the pipe shall be on the basis of the unit price in the Bid Proposal and shall cover all work and equipment required for excavation, backfilling, and drilling to properly install the pipe, including drilling fluid, plug, location marker, and tracing wire.

5-6. 6 INCH AND 4 INCH GATE VALVE, BOX, AND VALVE MARKER

Measurement for this item shall be on the basis of completed units in place. Payment for furnishing and installing gate valve, valve box, concrete collar, and marker shall be on the basis of the respective unit contract price for each size in the Bid Proposal. Payment shall include furnishing and installing valve, valve box, concrete collar, adjustable riser, adjusted to proper height, blocking, valve marker, excavation, backfilling and all labor and equipment to install the valve, valve box, concrete collar, and valve marker.

7. FIRE HYDRANT WITH 6-INCH VALVE & BOX AND BLOW OFF HYDRANT:

Payment for furnishing and installing fire hydrants and blow off hydrants shall be on the basis of the respective unit price in the Bid Proposal. Payment shall include furnishing and installing the hydrant with riser adjusted to proper height, blocking, drain & stone, excavation, backfilling and dewatering necessary to install hydrants, hydrant gate valve, valve box and adjustable riser with appurtenance lead and adapter.

8. POST HYDRANT:

Payment for furnishing and installing post hydrants shall be on the basis of the respective unit price in the Bid Proposal. Payment shall include furnishing and installing the post hydrant with riser adjusted to proper height, blocking, drain & stone, excavation, backfilling and dewatering necessary to install post hydrants.

9. MISC WATER MAIN FITTINGS

Measurement for this item shall be on the basis of completed units in place. Payment will be based on the respective unit contract price per fitting for the respective types and sizes in the Bid Proposal for fittings.

10. CONNECT TO EXISTING SYSTEM WITH TAPPING SLEEVE AND VALVE:

Payment for connecting a new 6-inch line to an existing 10-inch pipe with tapping sleeve and valve in manhole shall be based on the unit price in the Bid Proposal and shall include all labor, material and equipment necessary to make the connection and properly install the components.

11. CONNECT TO EXISTING SYSTEM WITH TAPPING SLEEVE :

Payment for connecting a new 1-inch line to an existing 10- inch pipe with tapping sleeve and valve in manhole shall be based on the unit price in the Bid Proposal and shall include all labor, material and equipment necessary to make the connection and properly install the components.

12. CONNECT TO EXISTING SYSTEM WITH TAPPING SLEEVE :

Payment for connecting a new 1-inch line to an existing 6- inch pipe with tapping sleeve and valve in manhole shall be based on the unit price in the Bid Proposal and shall include all labor, material and equipment necessary to make the connection and properly install the components.

13. CONNECT TO EXISTING SYSTEM WITH TAPPING SLEEVE :

Payment for connecting a new 1-inch line to an existing 4- inch pipe with tapping sleeve shall be based on the unit price in the Bid Proposal and shall include all labor, material and equipment necessary to make the connection and properly install the components.